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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,830	12/11/2006	David R Hirst	DHN/363/PC/US	9247
2543	7590	04/13/2010		
ALIX YALE & RISTAS LLP 750 MAIN STREET SUITE 1400 HARTFORD, CT 06103			EXAMINER ZHANG, JUE	
			ART UNIT 2838	PAPER NUMBER
			MAIL DATE 04/13/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/572,830

**Applicant(s)**

HIRST, DAVID R

**Examiner**

JUE ZHANG

**Art Unit**

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/9/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7, 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2, 5 and 6 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 7 and 10-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/22/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 11/9/2009
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office action is in response to the application filed on 11/09/2009. Claims 1-7, 10-13 are pending, Of which, claims 1, 4 are amended by the present amendment.

#### ***Information Disclosure Statement***

2. The information disclosure statements (IDS) submitted on 11/9/2009 has been considered by the examiner.

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-2, 5-6 are rejected under 35 U.S.C. 102(a) as being anticipated by Dragos (NPL\_Grid-Friendly Technology at Colorado State University, hereinafter Dragos).

Claim 1, Dragos discloses a responsive load device (e.g., Fig. 4) adapted to be connected to an electric load (e.g., Load, Fig. 4) which consumes intermittent or variable electric energy to maintain a variable between upper and lower limits of the variable, the upper and lower limits of the variable of the load being derived from and defined around a setpoint of the variable (col. 2, page 3; page 4; Fig. 4), the apparatus comprising:

means for receiving an input indicative of the frequency of the mains power supplied to the load from a grid (e.g., the frequency sensor)(Fig. 4); and

means responsive thereto to determine a level of stress under which the grid is operating and to control power consumption by said load (e.g., the refrigerator being turned off when the instability of power being detected) in accordance with the determined stress level (e.g., stress level determined by the line frequency fluctuation) (e.g., see Para 2, col. 1, page 4, Fig. 4) and to prevent the setpoint being increased or decreased in order to make power consumption be increased (i.e., preventing the user setpoint changes of the refrigerator to a lower temperature therefore increasing the power consumption after the refrigerator being turned off by the load controller because of the detection of the power instability is implicitly taught)( e.g., see Para 2, col. 1, page 4, Fig. 4) when a generation shortage grid stress level exceeds a first maximum threshold value and/or to prevent the setpoint being increased or decreased in order to make the power consumption be decreased when a demand shortage grid stress level is below a first minimum threshold value (e.g., 60Hz-7.5mHz) (e.g., see Para 2, col. 1, page 4, Fig. 4).

Claim 2. Dragos teaches the limitations of claim 1 as discussed above. It further teaches that wherein the device is responsive to the system generation shortage grid stress level exceeding a second minimum threshold value (e.g., 60Hz+7.5mHz), higher than the first, to prevent the load consuming power (i.e., the refrigerator being turned off when the frequency fluctuation exceeding 60Hz+7.5mHz) (e.g., see Para 2, col. 1, page 4, Fig. 4).

For method claims 5-6, note that under MPEP 2112.02, the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method, it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986). Therefore the previous rejections based on the apparatus will not be repeated.

***Allowable Subject Matter***

5. Claims 3-4, 7, 10-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. The following is a statement of reasons for the indication of allowable subject matters:

For claim 3, the prior art does not disclose or suggest, primarily, the device is responsive to the demand shortage grid stress level being below a second minimum threshold value, lower than the first, to increase the power consumption of the load to a maximum.

For claim 4 the prior art does not disclose or suggest, primarily, means for switching on or increasing power supplied to the load when said instantaneous stress level is above the upper instantaneous stress level limit and said variable is within the

range defined by the upper and lower thresholds; ... means adapted to automatically optimize or adjust the predetermined threshold values.

For claim 7, the prior art does not disclose or suggest, primarily, maximizing the power consumed by the electric load when the determined stress level of the grid falls below a second minimum threshold, less than the first.

For claim 10, the prior art does not disclose or suggest, the device is responsive to the demand shortage grid stress level being below a second minimum threshold value, lower than the first, to increase the power consumption of the load to a maximum.

For claim 11, the prior art does not disclose or suggest, primarily, maximizing the power consumed by the electric load when the determined stress level of the grid falls below a second minimum threshold, less than the first.

The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render the aforementioned indicated claim and any dependent claims thereof patentable over the art of record.

### ***Response to Arguments***

7. Applicant's arguments filed 10/13/2009 have been fully considered and here is examiner's reply for the reasons discussed below.

**a. Applicant's Arguments Regarding claim rejections under 35USC Section 102(a):**

- i. Applicant stated regarding the amended claim 1, 5 on page 9 of the  
REMARKS:

The Dragos publication does not, however, describe a device that monitors the

frequency of a grid and prevents a set-point from being adjusted in a non-grid friendly manner, based on a minimum and maximum grid stress thresholds. Accordingly, the claims are not anticipated by the Dragos publication.

Examiner's Response:

Applicant's above arguments have been considered but are found not persuasive. As it is clearly shown in the copy of Fig. 4 of the prior art Dragos:

"a device (e.g., the Load Controller, Fig. 4) that monitors the frequency of a grid (e.g., Frequency Sensor, Fig. 4) and prevents a set-point (i.e., a set-point of the refrigerator for setting the desired cooling temperature by user being inherently taught) from being adjusted in a non-grid friendly manner (i.e., preventing the user setpoint changes of the refrigerator after the refrigerator being turned off by the load controller because of the detection of the power instability is implicitly taught), based on a minimum and maximum grid stress thresholds (e.g., 60Hz+/-7.5mHz, see Para 2, Col. 1, Page 4, Fig. 4).

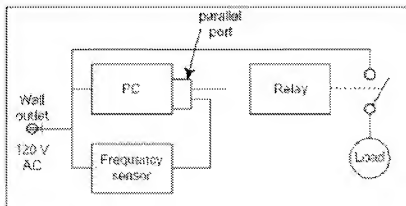


Figure 4 – Block Diagram of Load Controller including the Frequency Sensor [7]

The basic idea of the smart chip is it reads the frequency of the electricity coming into it and reacts based on that reading. A good indication of the power stability is the frequency (in Hz) of the electricity. Normal fluctuations of the frequency are around 60 Hz plus or minus one mHz. If there is a trip in the power (indicating unstable energy), the fluctuation could be up to 7.5 mHz. The smart chip constantly reads the frequency of the energy through the wall outlet and if a fluctuation of 7.5 mHz occurs, it detects it and, within milliseconds, trips the relay and shuts off the appliance. After the appliance is shut off, the frequency sensor continuously checks, and if the frequency becomes stable again, the chip flips the appliance back on. In order to not overload the utility company when the appliances all turn on, the chip randomly chooses a time between 0 and 1 minute to gradually restore electricity to all appliances temporarily shut off. This allowance for re-stabilization creates a more reliable energy system [7].

Therefore, the ground of rejection is maintained in the current office action.

- ii. Applicant further stated regarding the amended claim 1, 5 on page 9 of the REMARKS:

Dragos is completely silent regarding set points and does not even mention the relevance or importance of a set point at all.

Examiner's Response:

Applicant's above arguments have been considered but are found not persuasive. As indicated in the claims rejections above, the prior art Dragos anticipates the claimed limitations, and "a set point" of the refrigerator for setting a desired cooling temperature by user being inherently taught.



iii. Applicant further stated regarding the amended claim 1, 5 on page

9 of the REMARKS:

not be obvious to modify the devices of disclosure in the Dragos publication so that set points of the devices are prevented from being adjusted in such a way that the grid is adversely affected. The claims are therefore patentable over the Dragos publication

Examiner's Response:

Applicant's above arguments have been considered but are found not persuasive. The prior art Dragos anticipates the every claimed limitations under 35USC Section 102(e), and the set-point of the devices (i.e., the refrigerator) are prevented from being adjusted after the refrigerator being turned off. Therefore, there is no need for additional teachings for obviousness in the claim rejection.

**b. Applicant's Arguments Regarding Japanese Utility Model Application**

**Publication JP 536:**

iv. Applicant further stated regarding the amended claim 1, 5 on page

9 of the REMARKS:

Japanese Utility Model Application Publication No. H05-27536 ("JP 536") also does not describe the claimed features of the present application. Reference is made to the English translation submitted with the accompanying Information Disclosure Statement. This document describes an air conditioning

v. Applicant further stated regarding the amended claim 1, 5 on page

10 of the REMARKS:

Therefore, although JP 536 describes that the higher level unit may sometimes process the desired input set value as being inoperative and not allow a requested change in set value, this is determined by the higher level unit based on these two ranges of set points, and not based on minimum and maximum thresholds of a grid stress level, as in the present claims of record. The claims are therefore not anticipated by JP 536.

vi. Applicant further stated regarding the amended claim 1, 5 on page

10 of the REMARKS:

teaching of JP 536 because there is no teaching in this document whatsoever that the air conditioning system should be responsive to a grid and consequently, no teaching that a set point should be prevented from being adjusted in a non- grid friendly manner.

Examiner's Response:

Applicant's above arguments have been fully considered but are moot since prior art JP 536 has not been relied on in the claim rejections.

For at least the reasons indicated above, the current office action is made final.

***Allowable Subject Matter***

8. Claims 3-4, 7, 10-13 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matters:

For claim 3, the prior art does not disclose or suggest, primarily, the device is responsive to the demand shortage grid stress level being below a second minimum threshold value, lower than the first, to increase the power consumption of the load to a maximum.

For claim 4 the prior art does not disclose or suggest, primarily, means for switching on or increasing power supplied to the load when said instantaneous stress level is above the upper instantaneous stress level limit and said variable is within the range defined by the upper and lower thresholds; ... means adapted to automatically optimize or adjust the predetermined threshold values.

For claim 7, the prior art does not disclose or suggest, primarily, maximizing the power consumed by the electric load when the determined stress level of the grid falls below a second minimum threshold, less than the first.

For claim 10, the prior art does not disclose or suggest, the device is responsive to the demand shortage grid stress level being below a second minimum threshold value, lower than the first, to increase the power consumption of the load to a maximum.

For claim 11, the prior art does not disclose or suggest, primarily, maximizing the power consumed by the electric load when the determined stress level of the grid falls below a second minimum threshold, less than the first.

The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render the aforementioned indicated claim and any dependent claims thereof patentable over the art of record.

**Examiner's Note:**

10. Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is

respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

11. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

#### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUE ZHANG whose telephone number is (571)270-

1263. The examiner can normally be reached on M-Th 7:30-5:00PM EST, Other F 7:30AM-5:00PM EST

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica Lewis can be reached on 571-272-1838. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monica Lewis/  
Supervisory Patent Examiner, Art Unit 2838

JZ